

EAST SIDE COASTAL RESILIENCY



THE CITY OF NEW YORK PROPOSED ACTION PLAN AMENDMENT 20

Effective [HUD approval date]

For CDBG-DR Funds
Disaster Relief Appropriations Act of 2013
(Public Law 113-2, January 29, 2013)

**The City of New York Substantial
Rebuild By Design – Eastside**



**Action Plan Amendment
Coastal Resiliency Project**

August 30, 2019

Dear Friends,

In 2012, Hurricane Sandy highlighted both existing and growing vulnerabilities in New York City neighborhoods due to the impacts of climate change and extreme weather events. Since then, the City of New York has launched an unparalleled effort to rebuild impacted neighborhoods and mitigate the risk from future events.

To that end, with the support of the U.S. Department of Housing and Urban and Development (HUD), the City has worked with countless stakeholders on the East Side Coastal Resiliency (ESCR) project, a groundbreaking coastal protection initiative to address coastal flood risk and sea level rise in Manhattan. This Action Plan Amendment outlines the City's plan to implement this project.

HUD awarded New York City \$335 million through its Rebuild by Design (RBD) competition for one of three compartments described in the BIG U proposal, from East 25th Street to Montgomery Street—now known as ESCR. Established as an initiative of the Hurricane Sandy Rebuilding Task Force in close partnership with the Rockefeller Foundation, RBD sought to promote resilience and incorporate community engagement in the rebuilding process.

Since receiving the RBD award, the City has worked with communities in Lower Manhattan and the across the boroughs to solicit input from residents, designers, researchers, coastal experts, and engineers. The design of the ESCR project has been, and continues to be, a collaborative and iterative process and that has resulted in a better design to serve the community for generations. Recognizing the value of this bold effort, the City allocated additional capital dollars to leverage the HUD award serving as an example of how federal dollars can spur local investment.

The project as described in this Action Plan Amendment includes the raising of East River Park above the future floodplain, along with a series of additional flood protection measures that will provide much needed risk reduction from coastal flooding. Community members and visitors will benefit from enhanced open spaces, new park amenities, such as greenways and ballfields, and improved access to the waterfront. When completed, ESCR will benefit thousands of NYC residents—particularly many living in affordable and public housing. Additionally, it will

demonstrate a new framework for implementing a community-based, design-driven approach to coastal protection in our neighborhoods.

Hurricane Sandy will forever be remembered because of the many lives lost and the damages sustained. Yet, our response through this innovative resiliency project will serve as a reminder that our city will work together to take decisive actions to address the threats of a changing climate. We still have much work to do, but we do so knowing that only together can we create a stronger, more resilient city.



Jaimey Bavishi
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Mayor's Office of
Resiliency



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Overview

The City of New York (“City” or “NYC”) is the recipient of \$4.214 billion of Community Development Block Grant – Disaster Recovery (CDBG-DR) funding from the U.S. Department of Housing and Urban Development (HUD) to assist in disaster recovery and rebuilding efforts resulting from Hurricane Sandy. Included within that \$4.214 billion is a \$335 million Rebuild by Design (RBD) award for what is now referred to as the East Side Coastal Resiliency Project. The City allocated an additional \$3 million of CDBG-DR funds to the project, so the approved Action Plan has represented \$338 million in CDBG-DR funds from HUD for this project. The City's Action Plan provides details on how the City plans to spend grant funds on eligible Hurricane Sandy disaster recovery and rebuilding activities, including on the East Side Coastal Resiliency project.

Any change greater than \$1 million in funding committed to a certain program, the addition or deletion of any program, or change in eligibility criteria or designated beneficiaries of a program constitutes a substantial amendment and such amendment will be available for review by the public and approval by HUD. Since the publication of the Action Plan incorporating Amendments 1-19, a material change (as defined by requirements described in 79 FR 62189; VI.6.b.) to the East Side Coastal Resiliency Project has been proposed. The City is publishing this proposed subsequent Action Plan Amendment 20 for public comment, which provides final RBD project design information for the East Side Coastal Resiliency project.

The comment period on the proposed CDBG-DR Action Plan Amendment 20 is now open. Comments must be received no later than October 2, 2019, at 11:59 PM (EST). The proposed CDBG-DR Action Plan Amendment 20 and the public commenting forms are available at <http://www.nyc.gov/cdbgdr>. Individuals will be able to read the amendment and the currently approved Action Plan and comment on the amendment in English, Spanish, and Chinese (simplified). The online materials will also be accessible for the visually impaired. Written comments may also be directed by mail to Calvin Johnson, Assistant Director, CDBG-DR, NYC Office of Management and Budget, 255 Greenwich Street, 8th Floor, New York, NY 10007. Public comments may be given in person at the public hearing listed below.

The public hearing schedule for proposed Amendment 20 is below. The schedule is subject to change. Please call 311 or 212-NEW-YORK (212-639-9675) from outside New York City or check <http://www.nyc.gov/cdbgdr> for the most updated information.

**Tuesday, September 17, 2019, at 6:30PM
Manny Cantor Center
197 East Broadway, New York, NY 10002**

Paper copies of the Action Plan Amendment 20, including in large print format (18pt. font size), are available at the following address in both English and the languages listed above:

New York City Office of Management and Budget
255 Greenwich Street, 8th Floor Reception Area
New York, NY 10007

At the end of the comment period, all comments shall be reviewed and a City response will be incorporated into the City's Responses to Public Comments document. A summary of the comments and the City's responses will be submitted to HUD for approval in the final CDBG-DR Action Plan Amendment 20. The revised Action Plan Amendment 20 including the public comments and responses will be posted on the City's CDBG-DR website at <http://www.nyc.gov/cdbgdr>.

Some notes about the formatting of this substantial Action Plan amendment document:

The changes that this substantial amendment (Amendment 20) proposes for the City of New York are described below. Changes will be made to the section of the Coastal Resiliency chapter that describes the East Side Coastal Resiliency project within the currently approved Action Plan incorporating Amendments 1-19. This document can be found on the City's website at <https://www1.nyc.gov/site/cdbgdr/action-plan/action-plan.page>.

Once Amendment 20 is approved by HUD, the text of this amendment will be incorporated into the City's overall approved Action Plan. Then, the approved Action Plan, without indication of the changes made through this amendment, will be published at www.nyc.gov/cdbgdr. In addition to the current approved Action Plan, the City's CDBG-DR website includes a full history of all amendments associated with the Plan.

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I. Introduction

The east side of Manhattan encompasses part of the neighborhoods of Chinatown, the Lower East Side, East Village, and Stuyvesant Town. These neighborhoods, taken together with Lower Manhattan, Kips Bay, Tribeca, the West Village, Chelsea, and Hudson Yards comprise Southern Manhattan as defined in *A Stronger, More Resilient New York* (2013). This region is critical to New York City (City) and contains one of the largest business districts in the U.S.

The storm surge caused by Hurricane Sandy arrived in the area with great force and height. At the peak of Sandy's surge, the tide gauge at the Battery registered water heights of more than 14 feet above Mean Lower Low Water (MLLW), eclipsing the previous high-water mark from Hurricane Donna in 1960 by nearly four feet.

The surge overtopped bulkheads around Southern Manhattan, sending floodwaters inland (**Figure 1**). The extent of the flooding generally reached one to two blocks from the coastline at depths of two to three feet, though the waters did extend farther inland and to greater depths at several locations. The areas that generally experienced the most severe inundation were along the coast where there had once been marshes and streams, which have since been filled in by development.

The greatest extent of inland flooding was along the eastern edge of Southern Manhattan. The surge from the East River breached the bulkhead running from Kips Bay to Chinatown. Floodwaters inundated the East River Park esplanade, ball fields, and plantings, before traversing the FDR Drive and covering streets and surrounding buildings. The floodwaters traveled nearly 2,000 feet inland, with depths of up to several feet along portions of Avenue C. In East River Park and Stuyvesant Cove Park, dozens of trees were knocked down during the storm and nearly 260 were removed following the storm due to saltwater intrusion. Strong winds, storm surge, localized flooding and fallen tree branches damaged recreational fields and surfaces, fences, buildings, and supporting plumbing, electrical, and mechanical systems.

Most building damage in Southern Manhattan was to critical building systems, business inventory, and personal property. Even in areas where floodwaters reached only one to two feet, elevators, water pumps, fire- and life-safety systems, heating and cooling systems, and lighting were compromised as many of these buildings' systems were located in basements or sub-basements. As a result, conditions for individuals in the floors above floodwaters were challenging or untenable.

One of Sandy's most significant impacts on the area resulted from power outages across most of Manhattan south of 34th Street. Residents were left without light, heat, refrigeration, or water for drinking, cooking, flushing toilets, or bathing, even though their buildings had not flooded. In high-rise buildings, elevators stopped working. Many older or infirm residents were trapped in their apartments on higher floors, unable to communicate or gain access to emergency information through television or the Internet. This was further exacerbated by the fact that a portion of the population is limited English proficient.

As Hurricane Sandy approached New York City, Con Edison preemptively shut down two electrical networks in Lower Manhattan (the area south of the Brooklyn Bridge) to minimize the damage to their facilities and critical infrastructure. Nonetheless, the surge damaged substation facilities located at both East 13th Street and the South Street Seaport, shutting down electrical service to much of Manhattan below 34th Street for nearly four days after the storm.

Sandy also affected Southern Manhattan's transportation infrastructure. The power outage knocked out traffic signals and streetlights across the street network south of 34th Street. The surge inundated both major Manhattan coastline highways – the West Side Highway and the FDR Drive – with two to four feet of water.

Despite being preemptively shut down, the subway system sustained the worst flooding in its history. Floodwaters entered subway stations and tunnels through numerous low-lying entry points. Seven East River subway tunnels flooded, two of which were immersed in seawater from floor to ceiling.

Southern Manhattan’s two wastewater facilities were also affected by the storm. Both of these facilities experienced service outages due to flooding. The Manhattan Pumping Station at 13th Street was out of service for 25 hours, while the Canal Street Pumping Station was down for 42 hours. Subsequent testing by the New York City Department of Environmental Protection (DEP) showed no significant water quality impacts despite the shutdowns, which caused seawater mixed with stormwater and sewage to be released into surrounding drainage areas.

The storm also affected businesses and nonprofits. In areas that sustained greater impacts, such as the South Street Seaport district, ground-floor businesses were still closed months after the storm.

The City of New York is proposing to implement the East Side Coastal Resiliency (ESCR) Project (the proposed project) as a component of its overall plan to address vulnerability to major coastal flooding events. This project involves the construction of a coastal flood protection system along a portion of the east side of Manhattan and includes related improvements to City infrastructure. The ESCR project area begins at Montgomery Street on the Lower East Side and extends north along the waterfront to East 25th Street, encompassing portions of several Southern Manhattan neighborhoods that were severely impacted by Hurricane Sandy.

II. Project Description

Project Identification

The ESCR Project evolved from a winning Rebuild by Design (RBD) proposal known as the BIG U, which called for a flood protection system, including berms, floodwalls, and closure structures, that would provide social and environmental benefits to the community and an improved public realm. The proposal included coordinated plans for three contiguous, but separate waterfront regions called “compartments”:

- Compartment 1—East River Park
- Compartment 2—Two Bridges and Chinatown
- Compartment 3—Brooklyn Bridge to the Battery.

While each compartment would be equipped with a variety of design features that respond to the particular need and wishes of that particular community, they were envisioned to work together to demonstrate a comprehensive resiliency vision for lower Manhattan, protecting residents, business, infrastructure, and economic activity from the risks of a changing climate and extreme weather events while improving connectivity between the social, natural, and built environments. The Lower East Side North compartment (site of the ESCR Project), identified as a priority for integrated coastal protection interventions by the City in *A Stronger, More Resilient New York* (2013) and reiterated in *OneNYC* (2015), was selected in June 2014 by the United States Department of Housing and Urban Development (HUD) as the first phase of the winning RBD proposal.

The BIG U concept for Compartment 1 focused on combinations of berms, and closure structures (i.e., a floodgate across a street or sidewalk that is deployed during a storm event) to provide flood reduction. The design also proposed improving the connectivity of the adjacent residential neighborhood to the waterfront. Key design objectives included providing access to East River Park through bridges with gentle ramps (i.e., bridging berms); enhancing park access through improved landscaping; providing a new shared and meandering multi-purpose path at the toe of the berms; addressing safety concerns by improving lighting; providing new signage; and reprogramming the land beneath the elevated sections of the FDR Drive.

As a result of the grant award to the City, the RBD proposal was further developed through feasibility analyses and conceptual design, in close coordination with the public as well as City, State, and federal agencies. During the planning and preliminary design phase, site constraints, stakeholder feedback, and the need for integration with existing and planned projects were identified that resulted in modifications to the RBD concept. Further analysis of the constructability, as well as climate risk faced by New York City Department of Parks and Recreation (NYC Parks) assets, resulted in the proposed reconstruction of East

River Park above the current 100-year floodplain. Shifting the flood protection system away from FDR Drive addresses constructability challenges associated with work directly adjacent to the roadway, reducing construction time and associated risks to worker safety, and minimizing disruption for nearby residents during construction. Further, this modification would provide flood protection for inland communities as well as protect the valuable park resource from the future risk of tidal inundation resulting from sea level rise. Access to the East River waterfront would be enhanced through increasing the deck elevation of the East River Esplanade to match the raised park, reconstruction of pedestrian bridges and entryways, construction of foundations for a new shared-use flyover bridge, and relocation of two embayments that align more directly with park entrances to connect the community to the water as they arrive. Based on feedback from the community and urban design concerns, as well as site constraints, interference with critical Con Edison infrastructure, and New York City Department of Transportation (NYCDOT) and New York State Department of Transportation (NYSDOT) operations and maintenance requirements for the FDR Drive, the reprogramming elements under the elevated sections of the FDR Drive were eliminated. Instead, flood protection along the waterfront north of East 13th Street is provided by a combination of closure structures and floodwalls. Additionally, instead of tying inland at East 23rd Street, the flood protection alignment was extended to protect the Asser Levy Recreation Center while still tying into the existing VA Medical Center proposed floodwall that continues along East 25th Street. Additional investigations revealed conflicts with critical power transmission lines, and hydraulic modeling highlighted the need for drainage management. As a result, the overall design was modified to include carbon fiber wrapping to protect the transmission lines in East River and Stuyvesant Cove Parks, and to provide additional drainage management components.

The ESCR project area begins at Montgomery Street on the south and extends north approximately 2.4 miles along the waterfront to East 25th Street. The flood protection system is designed to reduce the risk of damage from coastal storms in the protected area through the installation of floodwalls, closure structures, and supporting drainage improvements. The protected area includes the United States Federal Emergency Management Agency (FEMA)-designated flood hazard area for the 100-year flood event, taking into consideration the 90th percentile projections of sea level rise to the 2050s located landward of the ESCR Project alignment.¹

Project Objectives

The principal objectives of the ESCR Project are as follows:

- Provide a reliable coastal flood protection system against the design storm event for the protected area (**Figure 2**);
- Improve access to and enhance open space resources along the waterfront, including East River Park and Stuyvesant Cove Park;
- Respond quickly to the urgent need for increased flood protection and resiliency, particularly for communities that have a large concentration of residents in affordable and public housing units along the ESCR project area; and
- Achieve implementation milestones and comply with conditions attached to funding allocations as established by HUD, including scheduling milestones.

Additionally, design considerations for the ESCR Project include the following:

- Reliability of the proposed coastal flood protection system;
- Urban design compatibility and enhancements;
- Improving the ecology and long-term resiliency of East River Park;
- Constructability;

¹ Sea level rise estimate represents the 90th percentile value for the 2050s as presented by the New York City Panel on Climate Change (NPCC 2013 Sea Level Rise Projections).

- Operational and maintenance needs;
- Minimizing use of pre-storm event deployable structures;

The ESCR Project meets these objectives by providing a reliable coastal flood protection system using a combination of floodwalls, closure structures (i.e., swing and roller floodgates), and supporting drainage improvements that together would reduce risk of damage from coastal storms in the protected area. The ESCR Project would elevate and reconstruct East River Park to make it more resilient to coastal storms and inundation from sea level rise, and enhance its value as a recreational resource, in addition to providing flood protection to the inland communities. Further, the project would include enhanced neighborhood connectivity and integration, including improved bikeways and walkways, redesign of several pedestrian bridges to provide enhanced access to the waterfront, and construction of a shared-use flyover bridge linking East River Park and Captain Patrick J. Brown Walk to address the narrow and substandard waterfront public access near the Con Edison facility (on the east side of the FDR Drive between East 13th and East 15th Streets) known as the “pinch point.”² The ESCR Project will meet all implementation milestones and conditions to comply with funding allocations as described in further detail below.

Description of Project Areas and Project Elements

The ESCR Project is composed of two project areas: Project Area One and Project Area Two (**Figure 2**). Project Area One extends along Montgomery Street from Cherry Street to Pier 42, and continues north along the waterfront to East 13th Street. Project Area One is approximately 61 acres and consists primarily of the FDR Drive right-of-way, a portion of Pier 42 and Corlears Hook Park, and East River Park. Project Area Two extends north along the waterfront from East 13th Street to East 25th Street and west across Asser Levy Place to the Veterans Affairs (VA) Medical Center. Project Area Two is approximately 21 acres and consists primarily of the FDR Drive right-of-way, the Con Edison East River Complex, Captain Patrick J. Brown Walk, Murphy Brothers Playground, Stuyvesant Cove Park, and Asser Levy Playground.

Coastal Flood Protection Components of the ESCR Project

The flood protection system includes a combination of coastal flood protection components, which taken together would act as one continuous barrier to coastal flooding along the East River waterfront from Montgomery Street to East 25th Street. These components are described in further detail below:

- **Floodwall (Figure 3)** - Floodwalls are narrow, vertical structures with a below-grade foundation that are designed to withstand both tidal storm surges and waves. They are typically constructed of steel, reinforced concrete, or a combination of materials with a reinforced concrete cap. Floodwalls can be used where there are horizontal space limitations and where there is a design objective to have a narrow footprint of the flood protection system. Typical floodwall designs include I-walls (partially embedded in the ground) and L-walls (foundation base slab supported by a pile foundation), each providing differing degrees of structural protection to withstand tidal surge and wave forces. Floodwalls can be above-ground or below-ground structures, as is proposed for the majority of East River Park.
- **Closure Structure** - In many flood protection systems, it is necessary to provide openings to accommodate day-to-day vehicular, bicycle, or pedestrian circulation along a street or sidewalk. In these instances, closure structures are installed to close the openings prior to the expected arrival of a design storm event and require active deployment. There are two types of closure structures that have been considered as part of the proposed project, each of which is made of steel and structurally reinforced. These closure structures include the following deployable gates:

² The ESCR Project includes construction of the foundations for the shared-use flyover bridge which would be completed in 2023. Subsequently, the superstructure of the shared-use flyover bridge would be completed in 2025.

- **Swing Floodgates.** Swing floodgates operate like hinged doors and are moved to the closed position prior to the anticipated arrival of a design storm event. The span limit for these systems is generally around 40 feet (see **Figure 4** for a cross section of a typical swing floodgate). This type of floodgate is a site fixture, meaning it remains on-site and is kept in the open position when not in use.
- **Roller Floodgates.** Roller floodgates are closure structures that can be used in openings with spans up to 72 feet. They are stabilized with a single or double line of wheels and are slid into their protection position prior to the anticipated arrival of a design storm event (see **Figure 5** for a cross section of a typical roller floodgate). This type of floodgate is kept in the open position when not in use.

The flood protection components described above would prevent coastal flooding from entering the protected area. The protected area lies within a large sewershed served by a combined sewer system that conveys a combination of sanitary sewage and stormwater through a network of pipes to the Manhattan Pump Station where it is then pumped to the Newtown Creek Wastewater Treatment Plant (WWTP) for treatment and discharge to the East River. Additional improvements are required to modify the existing combined sewer infrastructure to hydraulically isolate the protected area (drainage isolation) as well as to protect against inland flooding during the simultaneous occurrence of a rain event with a storm surge event (drainage management) (see **Figure 6** for an overview of infrastructure improvements).

- **Drainage Isolation.** Modifications to existing sewer infrastructure would ensure that this infrastructure would not act as a conduit through which tidal surge water from the East River can enter the protected area. These modifications include installing gates on the existing large-diameter sewer pipe (interceptor) that collects and conveys flow through the system and flood-proofing components of the existing sewer infrastructure (such as catch basins and manholes) on the unprotected side of the proposed flood protection system.
- **Drainage Management.** During a design storm event, depending on the nature of coincident rainfall, and with the tide gates closed, the sewer system conveyance pipes can reach capacity, potentially resulting in backups that cause inland flooding. Measures to address the potential flooding include the installation of additional parallel conveyance pipes and other improvements to enhance the existing conveyance capacity of the sewer system.
- **Infrastructure Reconstruction within East River Park.** The infrastructure within East River Park—including outfalls, regulators, and other infrastructure, as well as the park’s drainage collection system and water supply system—is proposed to be reconstructed.

Con Edison high-voltage transmission lines within the project area present a variety of challenges to the design and construction of flood protection measures. These lines are currently buried at a depth that allows effective heat dissipation, which is critical to the efficient functioning of electrical transmission in Lower Manhattan. During construction of the proposed project, Con Edison would undertake the wrapping of their existing live transmission lines located belowground in a protective carbon fiber material. The carbon fiber wrapping approach would protect the transmission lines during construction and ensure long-term viability and access.

The description below and **Figure 7** summarizes flood protection alignment and design for the ESCR Project.

Project Area One

The flood protection system in Project Area One would be largely integrated within an elevated East River Park, providing the opportunity for a holistic reconstruction, reimagining, and expansion of the types of user experiences in the park, while also enhancing neighborhood connectivity and resiliency. This flood protection system in East River Park would protect both the community and the park from design storm events, as well as from increased tidal inundation resulting from sea level rise. In addition, raising the park

to integrate with the flood protection system provides universal accessibility to enhanced park programming.

The proposed flood protection alignment begins at its southerly tieback along Montgomery Street, about 130 feet west of South Street; at South Street the system turns north for a distance of about 50 feet and then east, crossing under the FDR Drive to the east side of the highway with a pair of swing floodgates. Once on the east side of the highway, the flood protection system turns north and runs adjacent to the FDR Drive, continuing north into East River Park. Once in East River Park, the proposed flood protection alignment starts to turn east towards the East River, near the amphitheater. From here, the alignment continues north and the system parallels the East River Park bulkhead.

Within East River Park, the proposed project includes the following key design elements:

- A below-grade flood protection structure (i.e., floodwall) running parallel to the existing East River Park bulkhead coupled with the elevation of a majority of East River Park (with the exception of the Fireboat House), generally beginning at the existing amphitheater and continuing northward to the northern end of the park near East 13th Street, thereby protecting park facilities and recreational spaces from coastal flooding during design storm events and sea level rise inundation;
- Installing the floodwall structure below-grade to soften the visual effects of the flood protection system;
- Raising the majority of the park grade with an increase in elevation from west (the FDR Drive) to east (the East River bulkhead) to attain the flood protection system design elevation, accompanied by the reconstruction of the park open space including all fields and passive spaces, reconstruction of paths and walkways to provide universal access to these improved spaces, and incorporating resilient landscaping and substantial tree replanting that envisions a more diverse, resilient, and ecologically robust habitat;
- Reconstructing park facilities such as the Tennis House, Track and Field House, and comfort stations;
- Reconstructing the East River Esplanade to increase the deck elevation to match the raised park and protect the esplanade from design storms and sea level rise;
- Improving north/south access along the waterfront by constructing a new universally accessible shared-use flyover bridge connecting the north end of East River Park with Captain Patrick J. Brown Walk;
- Improving access to the waterfront by reconstructing the Corlears Hook Bridge over the FDR Drive and replacing the existing Delancey Street and East 10th Street Bridges to be universally accessible;
- Creating an expanded and reconfigured park-side East Houston Street landing and universally accessible entryway to the waterfront;
- Relocating the two existing embayments in the park and filling the existing embayments to maximize the community connections to the water and effectively site all recreational programming. Creating two new replacement embayments to provide a net gain in water area and enhanced ecological habitat;
- Reconstructing the amphitheater as an outdoor theater space;
- Reconstructing all water and sewer infrastructure in the park, some of which is reaching the end of the serviceable life, including the outfalls and associated pipes that cross the park to the East River bulkhead.

It is an objective of the design to improve the ecology of East River Park, which is susceptible to the effects of sea level rise, storm surge, and heavy rainfall events. Storm surge from severe events like Hurricane Sandy can overwhelm the park. Moreover, the threat from gradually increasing sea level rise adds to the risk of more frequent flooding from everyday storms or high tides. This flooding not only interrupts the ability for parks visitors to enjoy and utilize the amenities within East River Park, but also affects its

ecology. In 2014, NYC Parks removed 258 trees from East River Park due to saltwater damage from Hurricane Sandy.

The existing landscaping and planting plan in East River Park is reflective of the popular styles of the late 1930s, when the Park was first designed and completed. The planting design is formal, with a focus on tree geometry and placement that maximizes open spaces for active recreation. Species diversity and ecology were not priorities of the original landscape design: over half of the current tree canopy is comprised of just two species. In the original design, plant selection relied heavily on canopy trees, such as London plane, a non-native species, and oaks. London plane trees, in particular, were significantly affected by salt water inundation post Hurricane Sandy. Many succumbed to the inundation-related stress and required removal, while others continue to show significant signs of declining health.

In contrast to the lack of species diversity of prior park designs, the proposed landscaping plan incorporates park resiliency through a design that can withstand a changing climate and consideration of species diversity, habitat, salt spray, wind, maintenance, and care. The landscape plan includes over 50 different species, reflecting research around the benefits of diversifying species to increase resiliency and adaptive capacity in a plant ecosystem. The design also focuses on creating a more layered planting approach, allowing for informal planting areas that have flexibility and plant communities that together improve ecological richness. By elevating the majority of the park and its landscape, and diversifying plant species, the landscape in the park will be more resistant to salt spray exposure and improve resiliency and post-storm functionality over the long term.

Project Area Two

North of East River Park, the proposed flood protection system includes a closure structure across the FDR Drive. Two swing floodgates that, when deployed, would close this segment of the flood protection system across the highway, but in non-storm conditions would be recessed to the sides of the highway to allow for vehicular circulation. From there, the floodwall continues northward and aligns along the west (southbound) side of the FDR Drive, connecting into the flood protection system at the Con Edison East River Generating Station (between East 14th and East 15th Streets). A closure structure adjacent to East 14th Street near the FDR Drive would also be installed to allow Con Edison operational access. North of the East River Generating Station, a closure structure is proposed across the FDR Drive East 15th Street ramp, and the floodwall continues northward along the FDR Drive to Murphy Brothers Playground.

At Murphy Brothers Playground the proposed floodwall is aligned along the east side of the park, which would also be reconstructed with new ballfields, active recreational spaces, grading and landscaping.

Beginning at the northeast corner of Murphy Brothers Playground, the proposed flood protection system turns east along Avenue C, heading towards the East River, crossing the FDR Drive ramps (two swing gate closure structures are proposed here) and under the FDR Drive into Stuyvesant Cove Park. Within Stuyvesant Cove Park, the proposed flood protection system turns northward, where it is comprised of a combination of floodwalls with closure structures (roller gates) at the southerly entrance (from Avenue C) and at the East 20th Street entrance to allow public access into the park to the waterfront esplanade during non-storm conditions. Design of this segment is also being coordinated with the new design for Solar One Environmental Education Center and existing Citywide Ferry Service ferry landing.

North of Stuyvesant Cove Park, the system again turns west and back under the elevated FDR Drive at East 23rd Street. In this segment, a combination of floodwalls and closure structures (a combination of roller and swing gates) are needed to maintain vehicular and pedestrian circulation through this intersection during non-storm conditions, including: vehicle access to the FDR Drive ramps and service roads; pedestrian and cyclist access to and along the East River shared-use path; and, vehicle and pedestrian access to Waterside Plaza (including the U.N. School and the British International School of New York), the Skyport Marina and parking garage, and a BP service station. These closure structures are to be recessed except under storm conditions when they would be deployed to provide the proposed flood protection.

North of East 23rd Street and west of the FDR Drive, the proposed flood protection system continues northward along the sidewalk of the southbound FDR Drive service road. The proposed system then turns westward into and across the Asser Levy Park Playground (between the Asser Levy Recreation Center and the outdoor recreational space). Similar to Murphy Brothers Playground, the outdoor recreational space at Asser Levy Playground would be redesigned and reconstructed and a roller floodgate is proposed to connect to the VA Medical Center floodwall. The flood gate would maintain the connection between the playground and the Asser Levy Recreation Center and during a storm condition it would be deployed. The VA Medical Center flood protection system extends north and then west along East 25th Street to complete the northern tieback at First Avenue.

Project Feasibility and Effectiveness

The benefits achieved through implementation of the ESCR Project as proposed in design include providing increased coastal flood protection and enhancing waterfront access and open space resources along Manhattan's East River waterfront. The final design will meet all appropriate codes and industry design and construction standards. Upon completion of the final design for the ESCR Project, anticipated in late 2019, a registered Professional Engineer will certify that the design meets all appropriate codes and industry design and construction standards. Once constructed, the City will own, operate and maintain the flood protection system in accordance with an operations and maintenance protocol. Specifically, the City's Departments of Parks & Recreation, Transportation, and Environmental Protection will oversee the project's operation and maintenance together with Con Edison and the VA Medical Center for connections to their respective resiliency efforts that will meet FEMA standards and achieve FEMA accreditation.

The City of New York hereby certifies that funding will be made available to cover the long-term operating and maintenance costs associated with the ESCR Project. Specific costs will be identified as the design is finalized. The City's Financial Plan reflects five years of City-wide projected revenues and expenditures, currently FY17-FY21. Given that the construction timeline currently extends into 2023, these maintenance and operating costs fall outside of the scope of the current Financial Plan.³ Funding will be provided in the appropriate fiscal years once the City has the ability to do so.

The City is committed to developing and implementing a set of Resiliency Performance Standards for all infrastructure projects. The City looks to the best available science and promising practices in resiliency to inform the development of these performance standards. Specifically, the City will refer to the guidance provided in the "Resilience Performance Standards" section of the Infrastructure and Other City Services Chapter of the currently approved Action Plan incorporating Amendments 1-19. The City will generally rely on the following performance standards to measure resiliency within a project:

- Robustness: ability to absorb and withstand stressors and shocks
- Redundancy: additional channels to enable maintenance of the core functionality in an event of disturbance or system failure
- Resourcefulness: ability to adapt and respond in a flexible manner during stressors and shocks
- Response: ability to mobilize quickly in the face of stressors and shocks
- Recovery: ability to regain functionality after stressors and shocks

Rooted in these resiliency performance standards, the City will advance a plan to monitor and evaluate the coastal protection infrastructure developed through this RBD initiative, as required by the October 16, 2014 Federal Register Notice (79 FR 62189; VI.6.a.i.). The purpose of this plan is to convey how the City will monitor the planning, implementation, and achievement of key milestones in the delivery of the completed

³ The ESCR Project, including the flood protection system, raised East River Park, and foundations for the shared-use flyover bridge, is anticipated to be constructed in 3.5 years and completed in 2023. Subsequently, a prefabricated bridge span would be installed and completed in 2025 under a separate project.

ESCR Project. During implementation of the monitoring plan, the City will ensure that all the appropriate mitigation measures are put into place and meet government standards.

The plan will also include the evaluation methodology, which the City will implement after the project is complete. The purpose of the evaluation methodology is to determine the ESCR Project's efficacy level in addressing the community needs over a period of time through a robust inspection and data collection program. Inspection data will be captured in a report that documents findings that establish a baseline, monitor progress over a designated period of time, and establish benchmarks to gauge the effectiveness of the project against anticipated outcomes to support long-term operation of the flood protection system.

An operations and maintenance manual for the ESCR Project will be developed by the City for effective deployment of the proposed flood protection system. The manual will address each flood protection system component and the agency responsible for the components deployment during a flood event, along with a pre-storm timeline for its deployment.

Project Funding

To implement the proposed project, the City and its federal partners have committed approximately \$1.45 billion in funding. The City has entered into a grant agreement with the U.S. Department of Housing and Urban Development (HUD) to disburse \$335 million of Community Development Block Grant-Disaster Recovery (CDBG-DR) funds for the design and construction of the proposed project. The City is the grantee of CDBG-DR funds related to Hurricane Sandy for the development of a coastal flood protection system, which would be provided to the City through the New York City Office of Management and Budget (OMB), acting under HUD's authority. In addition, the City committed \$3 million from its overall Hurricane Sandy CDBG-DR allocation, bringing total CDBG-DR ESCR Project funds applied to \$338 million. These funds are eligible for reimbursement under HUD's RBD program, and will be used for planning, predevelopment, and project construction.

Currently, the \$338 million is broken into planning, predevelopment work, project construction, and administrative duties. Planning, which includes technical survey and feasibility analyses, totals \$13.7 million. Predevelopment work for environmental review and design activities totals \$52 million. Administrative costs sum to \$13.4 million. Lastly, construction and construction management activities total \$258.9 million. These budget allocations are estimates and will be amended as necessary.

To note, an updated Benefit Cost Analysis (BCA) was conducted and the finding was that the benefits of this project outweigh the cost. The full text of the BCA is included in Appendix A.

III. Implementation Partnership

The NYC Department of Design and Construction (DDC), in partnership with the NYC Parks, NYCDOT, DEP, Mayor's Office of Resiliency (MOR), NYC Office of Management and Budget (OMB), and NYC Department of Small Business Services – the "Project Team" – is overseeing the implementation of the ESCR Project. DDC and its partner agencies meet on a regular basis to set strategy and timelines, share project updates, and work through any issues.

MOR and DDC executed a Memorandum of Understanding on October 7, 2014, to administer the funding for the project. To implement the project per the requirements associated with the CDBG-DR funds and the schedule set forth by the City (with a groundbreaking in 2020 and spending all CDBG-DR dollars by June 2022), DDC utilizes existing on-call consultant contracts whenever possible and innovative procurement methods as permitted by law and under the Procurement Policy Board (PPB) rules. This included Topographic Survey and Soundings of the project area, conceptual/preliminary/final design services, community engagement, environmental review, and permitting. Future contracts will be issued for construction and construction management.

Partner Agencies

NYC Department of Design and Construction

DDC serves as the implementing agency and is working with other agencies to coordinate plans, designs, and the environmental review of the ESCR Project. DDC acts as the City's primary implementation agency and capital construction project manager, utilizing its experience in the timely implementation of critical and high-profile infrastructure and buildings projects, such as the Trunk Water Main Connections to Water Tunnel Number 3. In addition, DDC provides communities with new or renovated structures such as firehouses, libraries, police precincts, courthouses, and senior centers. DDC also delivers well-built roadway, pedestrian plazas, sewer and water main construction projects in all five boroughs. Over the last decade, DDC has completed more than 745 miles of new roadway, 735 miles of water mains, 588 miles of storm and sanitary sewers, and installed more than 42,000 sidewalk pedestrian ramps. To successfully manage this portfolio, DDC partners with other City agencies, as well as with architects and consultants whose experience and creativity bring efficient, innovative, and environmentally-conscious design and construction strategies to projects.

Mayor's Office of Resiliency

MOR, formerly the Mayor's Office of Recovery and Resiliency (ORR), serves as an advisory office for activities and projects proposed to increase resiliency, including strengthening coastal defense, upgrading buildings, adapting infrastructure and critical services, and strengthening neighborhoods. MOR leads the effort to build a stronger and more resilient New York through the implementation of recommendations described in resiliency planning policies, building on a foundation of public collaboration and analysis. MOR routinely executes complex programs and successful projects with a wide array of State and Federal agencies, including the New York State Governor's Office of Storm Recovery (GOSR), the New York State Division of Homeland Security and Emergency Services, the New York State Department of Environmental Conservation, HUD, FEMA, and the USACE, among others. MOR's multi-billion-dollar portfolio includes appropriations from Public Law 113-2 and requires careful coordination with State and federal agencies.

Mayor's Office of Management and Budget

OMB is the Responsible Entity (RE) for the disbursement of CDBG-DR funds for Hurricane Sandy from HUD to City agencies. As the project is funded and would receive approval from a federal government agency (i.e., HUD) and has the potential to result in significant impacts, it is subject to an environmental review under the National Environmental Policy Act (NEPA). As such, OMB is the NEPA Lead Agency for the Environmental Impact Statement (EIS) for the ESCR Project. As the City government's chief financial agency, OMB assembles and oversees both the expense budget and capital budget. The agency has extensive experience with managing funding activities, overseeing approximately 70 agencies with more than 300,000 full-time and full-time equivalent employees, and coordinating with State and federal agencies. In addition, the agency is charged with evaluating the efficiency and cost-effectiveness of City services and proposals and regularly provides vital information to government officials on local, national, and world economies.

NYC Department of Parks & Recreation

NYC Parks is the steward of approximately 30,000 acres of land (14 percent of New York City), including nearly 1,000 playgrounds and 14 miles of beaches. As the ESCR Project would be located in large part within City parkland, NYC Parks is the State Environmental Quality Review Act (SEQRA) / City Environmental Quality Review (CEQR) Lead Agency for the EIS. NYC Parks works closely with MOR, DDC, and other City agencies to ensure that NYC Parks' resiliency efforts support overall City goals. NYC Parks' primary objectives are to plan for the long-term resiliency of 148 miles of natural and built shoreline in NYC Parks' jurisdiction, create a comprehensive set of guidelines to develop and manage open spaces in the floodplain, and integrate resilient features that both protect and enhance communities. In addition to

approaching capital projects for individual parks with a goal of increasing resiliency, NYC Parks oversees a number of ongoing initiatives to support citywide resiliency measures. Those projects range from extensive coordination with the USACE to build protective berms and integrate community recreation along the east and south shores of Staten Island, as well as coordinating with GOSR on the Living Breakwaters RBD Project also located on Staten Island.

NYC Department of Transportation

NYCDOT ensures the safe, efficient, and environmentally responsible movement of people and goods in the City. A crucial part of this mission is to maintain and enhance the transportation infrastructure crucial to the City's economic vitality and quality of life. The agency oversees one of the most complex urban transportation networks in the world, including over 6,000 miles of streets and highways, 12,000 miles of sidewalk, and 789 bridges and tunnels, including the Williamsburg Bridge. As part of these goals to manage the City's transportation network, NYCDOT is working to identify resiliency and mitigation goals and strategies for the agency's infrastructure and regularly coordinates with MOR on critical Citywide coastal protection projects. NYCDOT also has extensive experience working with local, State and federal agencies, including the management and administration of emergency relief grant programs for Hurricane Sandy and other natural disasters. For the ESCR Project, NYCDOT serves as the lead reviewer of flood protection design and permits related to activities along, adjacent to, and within the FDR Drive and Williamsburg Bridge footings, and the local street network.

NYC Department of Environmental Protection

DEP protects public health and the environment by supplying clean drinking water, collecting and treating wastewater, and reducing air, noise, and hazardous materials pollution. In addition to providing clean drinking water to the City, DEP collects wastewater through a vast underground network of pipes, regulators, and pumping stations, and also treats 1.3 billion gallons of wastewater each day in a way that protects the quality of New York Harbor. As part of this mission, DEP oversees one of the largest capital construction programs in the region and serves as the lead reviewer of design and as an advisory agency for activities related to stormwater management, water and sewer infrastructure, and natural resources. DEP is committed to investing in water and sewer infrastructure to ensure the continuity of critical services into the future. By implementing resilient strategies to improve energy reliability, improve and expand drainage infrastructure, and promote redundancy and flexibility of the water supply, DEP continues to be a leader in proactive planning for climate change to ensure the resiliency of the City's water resources.

NYC Department of Small Business Services

SBS works to create economic security in the City by connecting New Yorkers to jobs, strengthening businesses, and building a fairer economy in neighborhoods across the five boroughs. In addition to helping businesses form and grow, SBS has jurisdiction over maritime and non-maritime construction for all City-owned waterfront properties. As such, SBS is tasked with issuing permits for all construction related to improvement or maintenance on Waterfront Properties under SBS jurisdiction, including portions of the ESCR Project Areas, including Stuyvesant Cove Park.

Federal, State, and Local Coordination

Implementation of the ESCR Project will require Federal, State, and local permits and authorizations. The City is in the process of preparing and submitting applications for various Federal, State, City, local, and other Partner Agency permits and approvals, including a Joint Permit Application to USACE and the New York State Department of Environmental Conservation (NYSDEC). A Joint Permit Application is anticipated to be submitted in summer 2019. As development of detailed design and construction drawings is currently ongoing and anticipated to be completed in summer 2019, permits have not yet been issued. The City has closely coordinated with Federal, State, City, local, and other organizations to ensure all required permit issuances and approvals for the ESCR project are anticipated by the end of 2019.

Agencies, organizations, and other partners that are involved in the environmental review and regulatory permitting and approval processes are as follows:

Federal

- U.S. Department of Housing and Urban Development (HUD) – Disbursement of funds; administration of CDBG-DR grant to the City of New York; review of Action Plan Amendments.
- U.S. Army Corps of Engineers (USACE) – Permits or authorizations for activities in Waters of the United States (Section 404 of the Clean Water Act) or structures within navigable waters (Section 10 of the Rivers and Harbors Act).
- U.S. Environmental Protection Agency (USEPA), U.S. Fish and Wildlife Service (USFWS), National Oceanic and Atmospheric Administration’s (NOAA) National Marine Fisheries Service (NMFS) – Advisory agencies to the environmental review process focusing on activities that affect wetlands, water quality, protected plant and wildlife species, and essential fish habitat.
- U.S. Coast Guard (USCG) – Coordination and authorization regarding placement of construction barges and underwater work.
- Federal Emergency Management Agency (FEMA) – Review of flood protection design and potential changes to Flood Insurance Rate Maps (FIRM).
- Advisory Council on Historic Preservation (ACHP) – Advisory role in federal review process pursuant to Section 106 of the National Historic Preservation Act (NHPA).
- U.S. Department of Veterans Affairs (VA) – Approval for activities on VA property and coordination for emergency preparedness and operations under storm conditions.

State of New York

- Department of Environmental Conservation (NYSDEC) – Permits related to activities in tidal wetlands or adjacent areas (Article 25) or protection of waters (Article 15), Water Quality Certification (Section 401); endangered species protection if an incidental take is determined; permits related to the State Pollutant Discharge Elimination System (SPDES) program; approvals related to the handling and transport of hazardous materials and soils.
- Department of State (NYSDOS) – Review of Coastal Zone Consistency.
- Office of General Services (NYSOGS) – Permits related to State Owned Land under Water.
- Office of Parks, Recreation and Historic Preservation (OPRHP) – Advisory role as the State Historic Preservation Office (SHPO) in federal review process pursuant to Section 106 of the National Historic Preservation Act (NHPA) with respect to designated and protected properties on the State and National Registers of Historic Places and properties determined eligible for such listing.
- Department of Transportation (NYSDOT) – Review of flood protection design and approvals related to construction activities along and adjacent to segments of FDR Drive under NYSDOT jurisdiction.

City of New York

- Department of City Planning (DCP) – Planning and waterfront area zoning text compliance and decision-making, Coastal Zone Consistency decision-making, and approval of actions subject to Uniform Land Use Review Procedure (ULURP).
- New York City Economic Development Corporation (NYCEDC) – Coordination and approval for activities on EDC-leased property, including Stuyvesant Cove Park and Solar One Environmental Education Center.
- New York City Emergency Management (NYCEM) – Coordination for emergency preparedness, response, and operations under storm conditions.

- Public Design Commission (PDC) – Review and approval of art, architecture, and landscape features proposed for City-owned property and capital projects.
- Landmarks Preservation Commission (LPC) – Advisory agency for activities on or near sites of historic or archaeological value.
- Department of Buildings (DOB) – Review of design and permits related to buildings including compliance with the City’s Building, Electrical, and Zoning Codes and construction activities in the FEMA-designated flood hazard area.
- Department of Housing Preservation & Development (HPD) – Review and approval for the disposition of NYCHA property (easement).
- Office of the Deputy Mayor for Operations – Advisory agency in CEQR review and for activities and projects proposed to advance long-term plans for sustainable growth.
- New York City Fire Department (FDNY) – Design approval for emergency access.

Other Partners

- New York City Housing Authority (NYCHA) – Approval for activities on NYCHA property.
- New York Power Authority (NYPA) – Approval for design elements related to NYPA easements.
- Public Service Commission – Approval of dispositions involving public utility properties (Con Edison).
- Consolidated Edison Company of New York (Con Edison) – Coordination for emergency preparedness and operations under storm conditions.
- Gouverneur Gardens Housing Corporation – Approval for activities on property.
- Community Boards 3 and 6 (CB3 / CB6) – Approval for activities within community district.

The City will continue to work with the Federal Sandy Regional Infrastructure Resilience Coordination (SRIRC) group to coordinate design, permitting, construction, and operation of the ESCR Project to align and integrate it with other recovery projects in the area. Additionally, the City will continue to work with the Sandy Regional Federal Review and Permitting (FRP) Team.

Per Section 101(c) of the Housing and Community Development Act (HCDA) of 1974, as amended, a CDBG-assisted activity must meet one of three national objectives: (1) benefiting low- and moderate-income persons; (2) preventing or eliminating slums or blight; and (3) meeting urgent needs. In addition, Section 105(a) of the HCDA requires that only certain eligible activities may be assisted with CDBG funds. The National Objective and Eligible Activity for the ESCR Project are listed below:

- National Objective: Low-Moderate Income; Urgent Need.
- Eligible Activity: Rebuild by Design.

Additional information for the ESCR Project can be found on the City’s website: <http://www.nyc.gov/escr>.

IV. East Side Coastal Resiliency Outreach Plan

DDC, in close coordination with the rest of the Project Team, has developed an outreach plan that builds upon the CDBG-DR public participation process. Community engagement and outreach is ongoing, and will continue throughout the project planning, design, construction, and close-out phases. In general, the City seeks to empower local residents and stakeholders with broad input on the project’s design and amenities, provided such input falls within the project’s technical and budgetary boundaries.

The City recognizes the unique knowledge, background, and experience that local residents can bring to project planning and design. The City views partnerships with key constituencies as crucial to the success of the ESCR Project. To date, the project has conducted numerous outreach events tailored specifically to the interested public, residents, elected officials, and community groups. This approach informed and involved these groups at appropriate points in the project lifecycle by presenting timely information and obtaining feedback.

To facilitate productive interaction between the City and communities, the City will continue to dedicate appropriate resources and attention to its engagement endeavors.

When necessary and practicable, the City engages with residents who have limited English proficiency by communicating information in spoken and written formats in individuals' primary language. Based on community needs, spoken format interpretive services will be provided in Mandarin, Cantonese, and Spanish. Similarly, print translations will be provided in Simplified Chinese and Spanish.

DDC takes the lead role in coordinating community engagement and communicating with interested City, State, and federal agencies throughout project execution, as well as leading coordination of interagency press and communications. Project implementation coordination is considered part of DDC's project management responsibilities, with support from the Partner Agencies.

The goals of the community outreach process, developed by the Project Team, are shaped and realized by discussions with stakeholders and broader public workshops/feedback sessions. The overarching goals are to:

- Enable and facilitate input from stakeholders;
- Explore and communicate opportunities and trade-offs; and
- Strengthen project design and implementation through collaborative discussion.

Stakeholder engagement is intended to expand upon outreach conducted during the RBD competition phase, and emphasizes the planning and design activities that advance implementation. This includes providing a platform to incorporate feedback from the various community stakeholders as the project moves from feasibility into design and then into construction. In order to support ongoing public outreach in partnership with community stakeholders, the Project Team will continue to:

- Compile a comprehensive list of stakeholder organizations and individuals, with input from community leaders and elected representatives;
- Sufficiently advance site investigation and design ahead of community engagement to guide and lead discussions with stakeholders;
- Coordinate messaging and public presentations with other City initiatives and projects;
- Arrange meetings and briefings with major stakeholder groups; and
- Work in partnership with community stakeholders, including, but not limited to: NYCHA residents and tenant associations; Community Board leaders and members; community-based organizations; local businesses; elected representatives.

The following community engagement meetings that have taken place to date are listed below in **Table 1**:

Table 1
Community Engagement Meetings to Date

Date	Meeting Type	Primary Meeting Subject(s)
January 5, 2015	CB3/CB6 Joint Waterfront Task Force	Project Update and Community Engagement Preview
March 19, 2015	Community Engagement	How do you use the waterfront?
March 23, 2015	Community Engagement	How do you use the waterfront?
April 7, 2015	CB3/CB6 Joint Waterfront Task Force	Project Update and Community Engagement Meeting Results and Preview of Next Community Engagement Meetings

Table 1
Community Engagement Meetings to Date

Date	Meeting Type	Primary Meeting Subject(s)
May 19, 2015	Community Engagement	What are the flood protection, urban design, and upland connection options for Project Area Two?
May 20, 2015	Community Engagement	What are the flood protection, urban design, and upland connection options for Project Area One?
May 28, 2015	Community Engagement	What are the flood protection, urban design, and upland connection options for Project Area One?
July 9, 2015	CB3/CB6 Joint Waterfront Task Force	Project Update and Community Engagement Meeting Results and Preview of Next Community Engagement Meetings
July 28, 2015	Community Engagement	How do we combine the options to make alternatives for Project Area Two?
July 29, 2015	Community Engagement	How do we combine the options to make alternatives for Project Area One?
July 30, 2015	Community Engagement	How do we combine the options to make alternatives for Project Area One?
September 10, 2015	Community Engagement	How do we combine the options to make alternatives for Project Area One?
September 30, 2015	CB3/CB6 Joint Waterfront Task Force	Project Update and Community Engagement Meeting Results and Preview of Next Community Engagement Meetings
October 6, 2015	Community Engagement	Overall Initial Design Direction: Input and Feedback
October 8, 2015	Community Engagement	Overall Initial Design Direction: Input and Feedback
May 23, 2016	CB3/CB6 Joint Waterfront Task Force	Review project goals and Preliminary Preferred Alternative
September 20, 2016	CB3/CB6 Joint Waterfront Task Force	Update on project status
November 14, 2016	Asser Levy and Murphy Brothers Playgrounds Community Meeting	Project overview and review site considerations and design options for Murphy Brothers Playground and Asser Levy Recreation Center + Playground
November 28, 2016	Project Area Two Community Outreach	Design considerations and approach for Project Area Two

Table 1
Community Engagement Meetings to Date

Date	Meeting Type	Primary Meeting Subject(s)
December 1, 2016	Project Area One South Community Engagement	Design considerations and approach for Project Area One – South
December 7, 2016	Project Area One North Community Outreach	Design considerations and approach for Project Area One – North
January 31, 2017	CB3/CB6 Joint Waterfront Task Force	Update on project status
February 16, 2017	Asser Levy and Murphy Brothers Playgrounds Community Meeting	Review site considerations and design options for Murphy Brothers Playground and Asser Levy Recreation Center + Playground
June 20, 2017	CB3/CB6 Joint Waterfront Task Force	Project updates including Stakeholder Meetings, Substantial Action Plan Amendment, interior drainage analysis, 24th/25th Street alignment, and field work
November 9, 2017	CB3/CB6 Joint Waterfront Task Force	Update on project status
March 15, 2018	CB3 Parks, Recreation, Waterfront, and Resiliency Committee	Overall Project Design update
March 26, 2018	CB6 Land Use and Waterfront Committee	Overall Project Design update
March 27, 2018	CB3/CB6 Joint Waterfront Task Force	Overall Project Design update
April 11, 2018	CB6 Full Board Meeting	Overall Project Design update
October 11, 2018	CB3 Parks, Recreation, Waterfront, and Resiliency Committee	Project Design Update (Raised East River Park)
November 8, 2018	CB6 Land Use and Waterfront Committee	Project Design Update (Raised East River Park)
December 10, 2018	Interactive Community Engagement Meeting	Project Status and Design Update (Raised East River Park)
December 11, 2018	Interactive Community Engagement Meeting	Project Status and Design Update (Raised East River Park)
January 10, 2019	CB3 Parks, Recreation, Waterfront and Resiliency Committee	Project Design Update
January 17, 2019	LESReady!	Project Design Update
January 23, 2019	New York City Council, Jointly held Public Hearing of the Parks and Recreation Committee and the Committee on Environmental Protection	Project Design Update

Table 1
Community Engagement Meetings to Date

Date	Meeting Type	Primary Meeting Subject(s)
January 28, 2019	CB6 Land Use and Waterfront Committee	Project Design Update
February 4, 2019	NYCHA Tenant Associations Leadership	Project Design Update
February 14, 2019	CB3 Parks, Recreation, Waterfront, and Resiliency Committee	Project Design Update
February 19, 2019	Lower East Side Power Partnership	Project Design Update
February 28, 2019	NYCHA, Jacob Riis Houses Residents	Project Update
March 6, 2019	Amphitheater Working Group	Project design discussion related to reconstruction of amphitheater
March 12, 2019	NYHCA, LES II/Bracetti Plaza and LES V Residents	Project Overview
March 13, 2019	East River Alliance	Project Design Update and responding to specific design and construction questions raised
March 14, 2019	CB3 Parks, Recreation, Waterfront, and Resiliency Committee	Project Design Update
March 25, 2019	CB6 Land Use and Waterfront Committee	Project Design Update (Project Schedule, Pinch Point Bridge, Project Area 2 [14th to 25th Street] Park designs; location of 20th Street flood gate and gate houses, drainage issues)
March 26, 2019	Stuyvesant Town-Peter Cooper Village Tenants Association/Tenants	Project Design Update (Project Schedule, Pinch Point Bridge, Project Area 2 [14th to 25th Street] Park designs; location of 20th Street flood gate and gate houses, drainage issues)
March 28, 2019	NYCHA, Bernard M. Baruch Houses Residents	Project Overview
April 9, 2019	NYCHA Riis Residents Meeting	Project Overview

Table 1
Community Engagement Meetings to Date

Date	Meeting Type	Primary Meeting Subject(s)
April 11, 2019	CB3 Parks Committee Meeting	Project Update
April 22, 2019	CB6 Land Use Committee Meeting	Project Design Update
April 29, 2019	NYCHA Wald Residents Meeting	Project Design Update
May 14, 2019	Open House	Project Design Update and Soliciting Community Feedback
May 15, 2019	Open House	Project Design Update and Soliciting Community Feedback
May 16, 2019	CB3 Parks Committee Meeting	Project Update (Open House debrief, Neighborhood Park Improvements)
May 28, 2019	CB6 Land Use and Waterfront Committee ULURP Public Hearing	ULURP Hearing
June 3, 2019	Grand St. Town Hall	Project Design Update and Soliciting Community Feedback
June 5, 2019	Open House	Project Design Update and Soliciting Community Feedback
June 6, 2019	Open House	Project Design Update and Soliciting Community Feedback
June 11, 2019	CB3 Parks Committee ULURP Public Hearing	ULURP Hearing
June 12, 2019	CB6 Full Board Meeting	ULURP Hearing
June 13, 2019	CB3 Parks Committee Meeting	ULURP Hearing
June 25, 2019	CB3 Full Board Meeting	ULURP Hearing
July 17, 2019	Borough President ULURP Hearing	ULURP Hearing

In addition, agency coordination and public involvement is also being conducted as part of the project’s environmental review process to inform interested parties of the progress of the project and to encourage continuous agency and community involvement in the decision-making process. The environmental review process, with OMB and NYC Parks as lead agencies, provides a means for decision-makers to systematically consider environmental effects along with other aspects of project planning and design to evaluate and compare reasonable alternatives and to identify and mitigate, where practicable, any significant adverse environmental impacts. As the project has the potential to result in significant adverse environmental impacts, it was determined that an EIS would be required as discussed above. Therefore, at OMB’s request, the HUD issued a Notice of Intent to Prepare an EIS in accordance with 24 CFR Part 1502. In addition, OMB and NYC Parks prepared a Draft Scope of Work to describe the proposed content of the DEIS to explain the methodologies to be used in the impact analyses, and to allow for public and stakeholder participation in accordance with 24 CFR Part 58, 40 CFR Parts 1500-15087, and 6 NYCRR Part 617.

A Draft Scope of Work for the DEIS was published on October 30, 2015, and a public scoping meeting was held on December 3, 2015, with a public input and review period that remained open until December 21, 2015. A Final Scope of Work, which reflected public comments made on the Draft Scope, was issued on April 5, 2019. The DEIS is based upon the Final Scope of Work, and it, along with the subsequent Final EIS (FEIS) will serve to fulfill the statutory obligations of NEPA, SEQRA, and CEQR.

A Notice of Availability (pursuant to NEPA) and a Notice of Completion (pursuant to CEQR) for the DEIS was issued on April 5, 2019. Publication of the DEIS and Notices initiated the public review period, which remained open through August 30, 2019. During this period, the public had the opportunity to comment on the DEIS in writing, or at a public hearing on July 31, 2019. After the DEIS public comment period closed, a Final EIS (FEIS) was prepared, which includes a summary of the comments received on the DEIS, responses to all substantive comments, and any necessary revisions to the DEIS to address those comments. No sooner than 30 days after publishing the FEIS, OMB will prepare a Record of Decision and Statement of Findings that will describe the Preferred Alternative (the ESCR Project), its environmental impacts, and any required mitigation. Similarly, NYC Parks will prepare a Statement of Findings demonstrating that it has reviewed the impacts, mitigation measures, and alternatives in the FEIS prior to adopting its findings. OMB can proceed with the federal action of requesting release of CDBG-DR grant funds from HUD once the environmental review process is concluded.

East Side Coastal Resiliency – Citizen Participation Plan

Approved on December 21, 2018, New York City’s Action Plan incorporating Amendments 1-19 includes information on the Citizen Participation Plan (Pg. 166) and the ESCR Citizen Participation Plan (Pg. 168) in conformance with the regulations at 78 CFR 14329 and 69104, respectively. The following section augments the ESCR Citizen Participation Plan to include elements of the overall Citizen Participation Plan, and to add specific details to address community needs of the ESCR project area.

a) Public Hearing

For substantial amendments to the Action Plan, the City of New York will hold a public hearing(s) in the ESCR project area. Citizens and stakeholders will have reasonable and timely access to the public hearing(s).

In the upcoming public hearing(s), the City will provide the opportunity for citizens to submit comments orally. The City treats written and oral comments equally and will incorporate both in the Responses to Public Comment document submitted to HUD with substantial amendments.

b) Public Notice and Comment Period

In accordance with CDBG-DR requirements, the City of New York has developed and will maintain a comprehensive website describing the ESCR project assisted with these funds. The City will post all Rebuild by Design/ ESCR Action Plan Amendment(s) on the City’s CDBG-DR website

(www.nyc.gov/cdbgdr) to give citizens an opportunity to read the plan and to submit comment(s). This website is featured prominently on, and is easily navigable from, the City’s Recovery homepage (www.nyc.gov/recovery).

Paper copies of this Action Plan amendment will be available in both English (including large, 18pt type) and the languages listed in the “Individuals with Limited English Proficiency (LEP)” section at the following address:

Office of Management and Budget
255 Greenwich Street, 8th Floor
New York, New York 10007

A comment period of at least thirty (30) days, as required by HUD, shall be provided for citizens, affected local governments, and other interested parties an opportunity to comment on substantial amendments to the Action Plan. Notices advertising the public comment period will be placed in daily newspapers, non-English newspapers, and weekly community newspapers. Comments may be submitted as follows:

- Electronically on the City’s CDBG-DR website at www.nyc.gov/cdbgdr.
- Written comments may be mailed to:
Office of Management and Budget
255 Greenwich Street, 8th Floor
New York, NY 10007
- By telephone by contacting 311, New York City's main source of government information and non-emergency services. Dial 311 within New York City or (212)-NEW-YORK (212-639-9675) from outside New York City.

At the end of the comment period, all comments shall be reviewed and a City response will be incorporated into the City’s Responses to Public Comments document. A summary of the comments and the City’s responses will be submitted to HUD with the Action Plan. A revised Action Plan including the public comments and responses will be posted on the City’s CDBG-DR website.

c) Individuals with Limited English Proficiency (LEP)

As indicated in the ESCR outreach plan above, based on community needs and LEP data within the ESCR project area, both the instructions for commenting on, and access to, the Action Plan, when it relates specifically to the East Side Coastal Resiliency RBD project only, were updated following Action Plan Amendment 13.

The Action Plan will be translated into Spanish and Chinese (simplified). Comments will be accepted through the online commenting form in English and the two aforementioned languages. The City will make every possible effort to translate and consider comments submitted in any other language within the timeframe. **In addition to the English language publications Daily News and the New York Post, the Public Notices, announcing the public comment period dates and hearing location, will be published in the following newspapers: El Diario (Spanish) and Sing Tao Daily (Chinese).**

The City will provide translated copies of the Action Plan Amendments at public hearings in Spanish, and Chinese (simplified). Copies of these documents remain posted on the City’s website and are available at the Office of Management and Budget during the comment period. At public hearings, the City offers in-person interpretation services in Spanish, Mandarin, and Cantonese. The interpreters are also available to translate citizen questions.

d) Persons with Disabilities

As noted above, hard copies of Action Plan(s) will be available in large print format (18pt font size) at the location listed above. The online materials will also be accessible for the visually impaired. For

more information on how people with disabilities can access and comment on the Action Plan, dial 311 or, using a TTY or Text Telephone, (212) 504-4115.

e) The Final HUD Approved Action Plan

Following HUD approval, the Action Plan will be posted on the City’s CDBG-DR website. Copies of the Final Action Plan will also be made available upon request.

f) Response to Citizen Complaints

The City of New York shall provide a written response to every complaint relative to the CDBG-DR grant within fifteen (15) working days of receipt if practicable.

g) Action Plan Amendments

If the final EIS or other project plan development result in material changes to the project (as outlined in the August 15, 2016, Federal Register notice [81 FR 54114]), after the submission or approval of the Action Plan, then a subsequent substantial Action Plan amendment will be prepared for the ESCR project in order to describe the final project as permitted and as approved through the environmental review process. If no material changes occur to the project design and scope submitted to or approved by HUD, then no additional amendment would be necessary.

In the case of a subsequent substantial Action Plan amendment, the City of New York will follow the citizen participation processes outlined above.

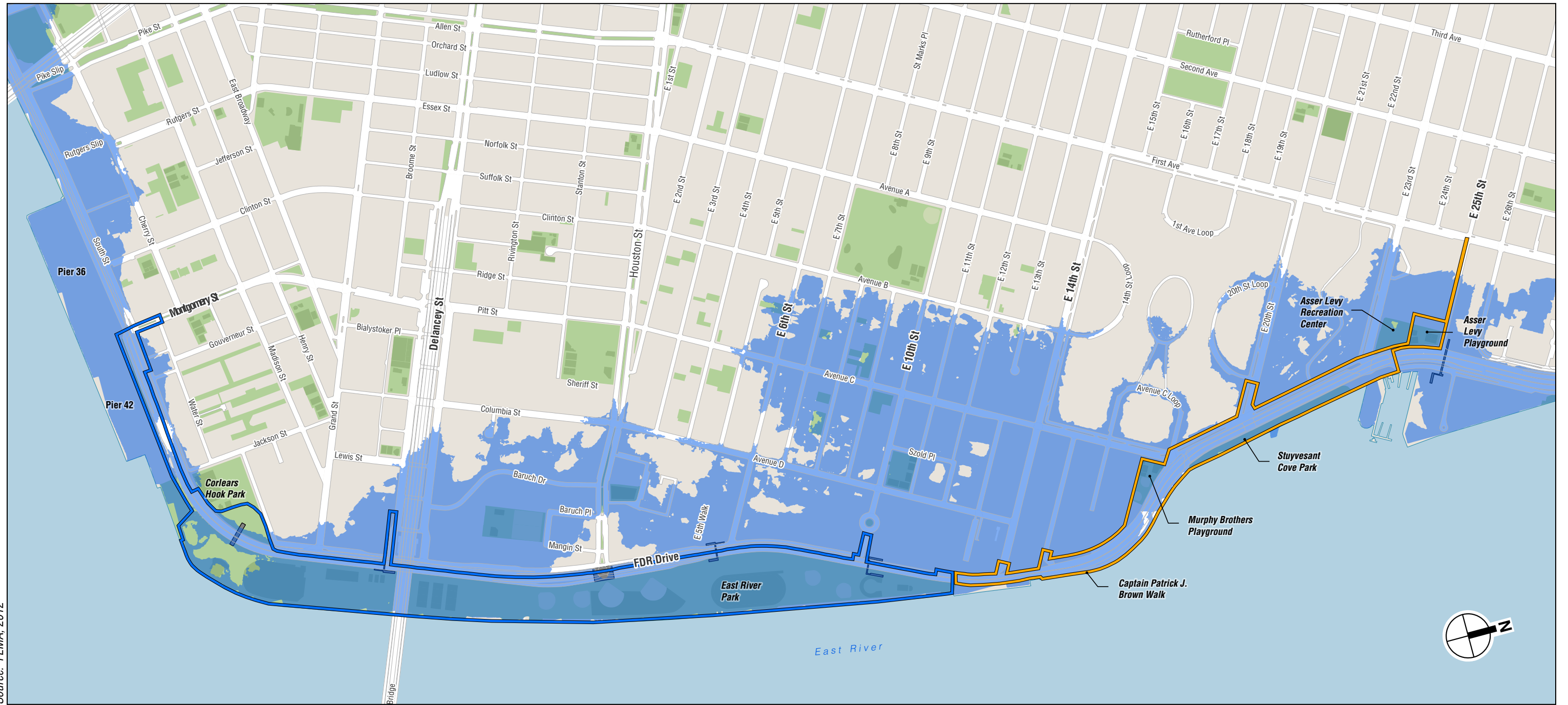
V. Project Timeline




The draft project timeline is provided in additional detail below. Dates and task durations shown below are subject to change based on ongoing design and coordination with local, State, and federal stakeholders.

- Survey Work, Feasibility Study and Pre-Scoping: June 2014 to December 2014
- Conceptual Design: January 2015 to August 2016
- Preliminary Design: September 2016 to July 2019
- Final Design: August 2019 to December 2019
- Environmental Impact Statement (EIS): December 2015 to December 2019
 - Public Scoping Meeting: December 3, 2015
 - Draft EIS (DEIS) Release: April 5, 2019
 - DEIS Public Hearing: July 31, 2019
 - Public Review of DEIS: April 5, 2019 to August 30, 2019
 - Final EIS (FEIS) Release: September 13, 2019 (anticipated)
 - Record of Decision (ROD) / Findings: November 2019 (anticipated)
 - Request for Release of Funds (RROF): November 2019 (anticipated)
 - Authority to Use Grant Funds (AUGF): December 2019 (anticipated)
- Uniform Land Use Review Procedure (ULURP): April 2019 to November 2019
 - ULURP Certification: April 22, 2019
 - Community Board Public Hearings: May 28, 2019; June 11–13, 2019; June 25, 2019
 - Borough President Public Hearing: July 17, 2019
 - City Planning Commission Public Hearing: July 31, 2019
 - City Planning Commission Vote: September 23, 2019 (anticipated)
 - City Council Public Hearing: October 2019 (anticipated)

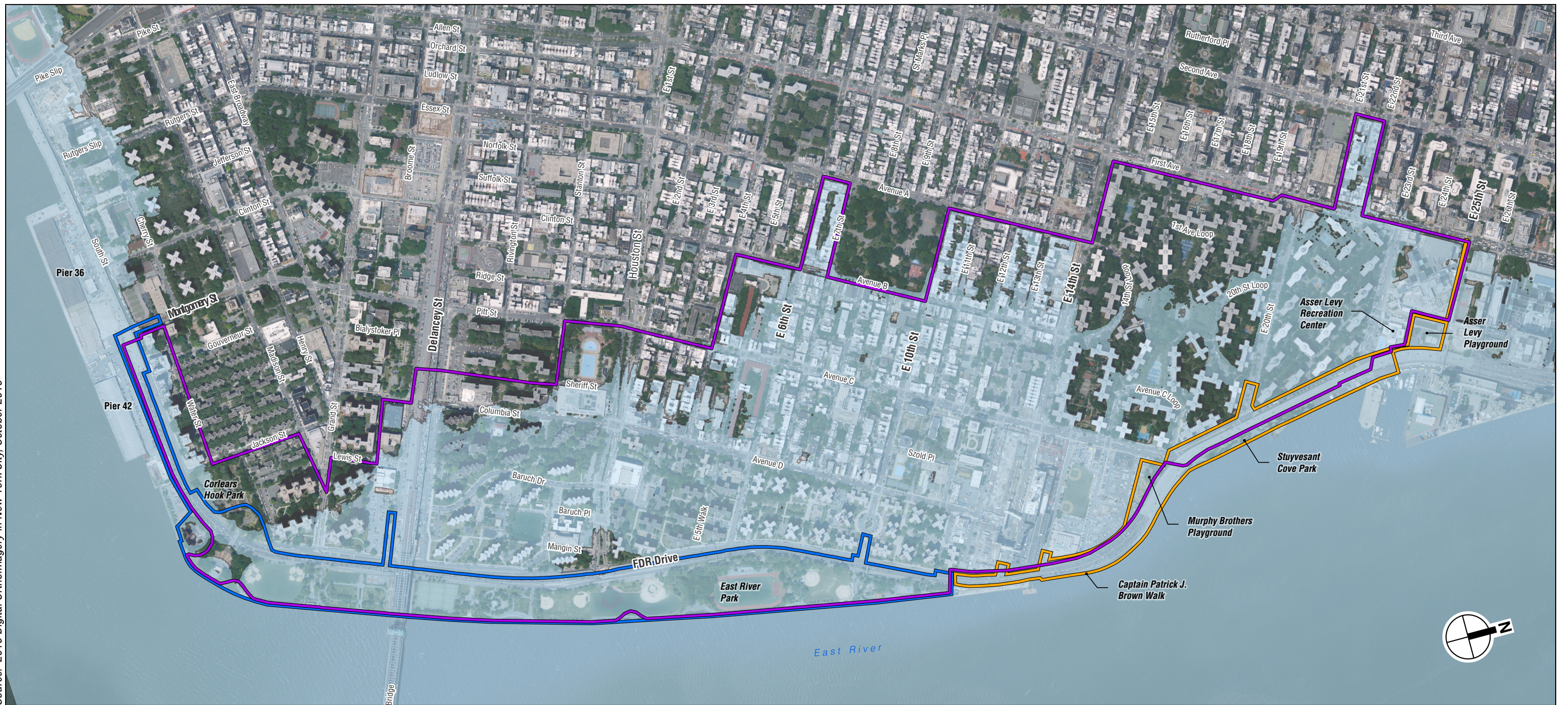
- City Council Vote: October / November 2019 (anticipated)
- Permitting: July 2017 to March 2020
 - USACE Jurisdictional Determination: July 21, 2017
 - Joint Permit Application Submittal to USACE / NYSDEC: May 24, 2019
 - Revised Joint Permit Application Submittal to USACE / NYSDEC: August 30, 2019 (anticipated)
 - Permit Issuance: March 2020 (anticipated)
- Procurement and Construction: August 2019 to December 2023
 - Procurement and Registration: August 2019 to March 2020 (anticipated)
 - Groundbreaking: March 2020 (anticipated)
 - Completion of Flood Protection System and Raised East River Park: June 2023 (anticipated)
 - Project Completion: December 2023 (anticipated)

Source: FEMA, 2012



-  Project Area One
-  Project Area Two
-  Hurricane Sandy Flooding Extent

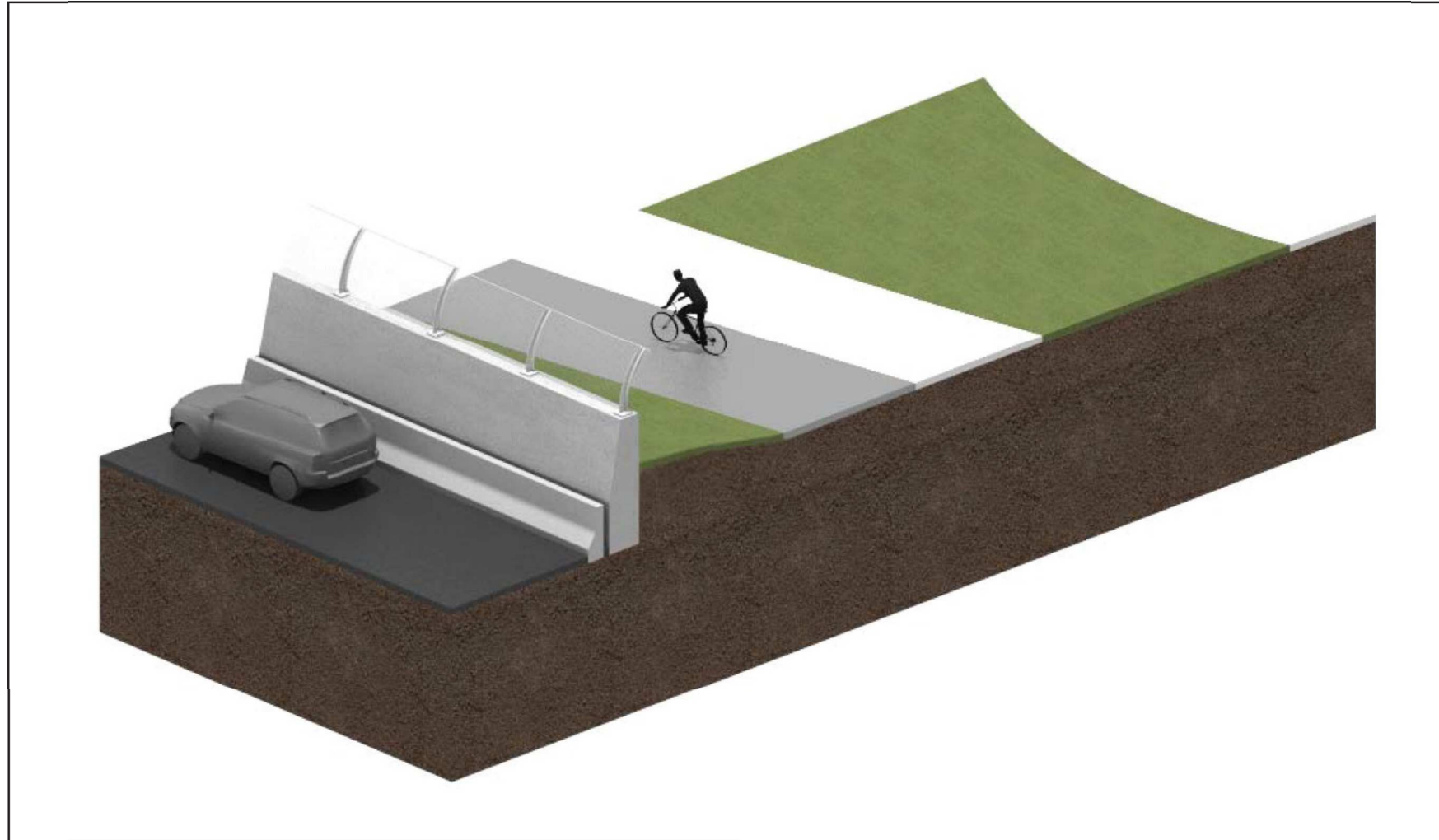
Source: 2016 Digital Orthoimagery in New York City, October 2016



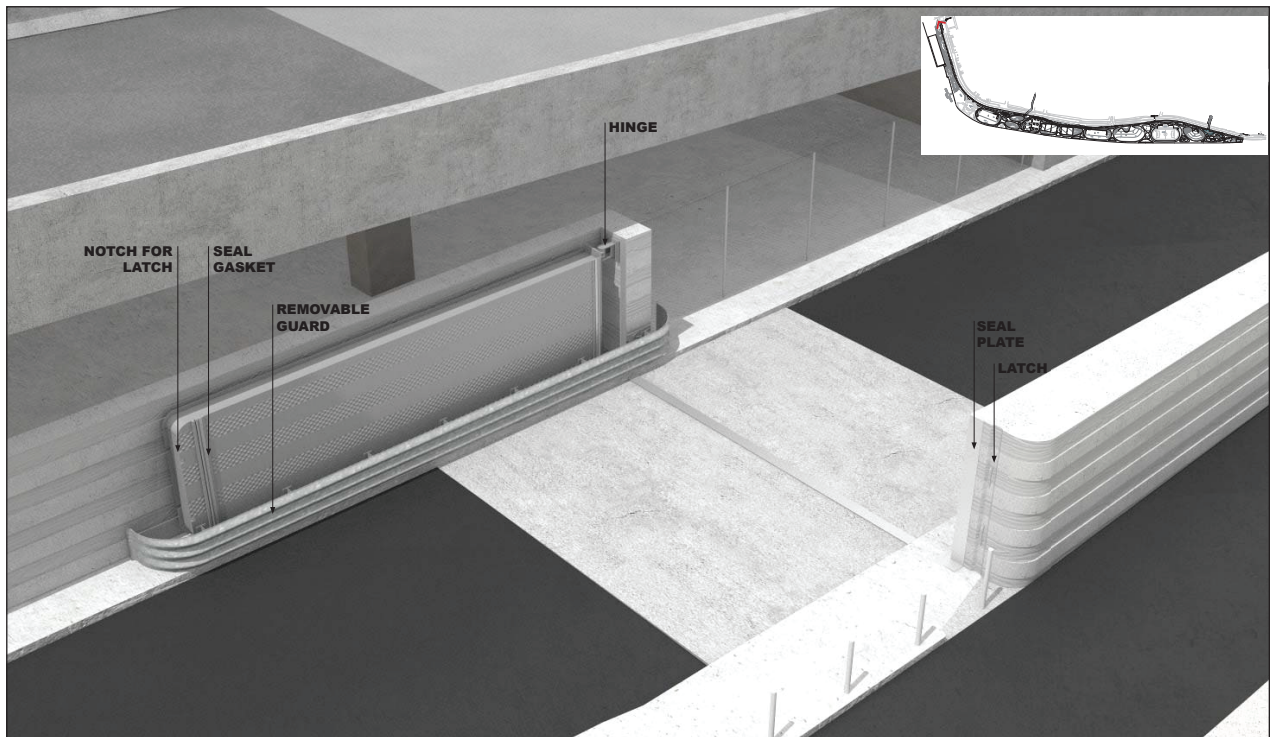
-  Project Area One
-  Project Area Two
-  Protected Area
-  100-year Flood Hazard Area with 90th Percentile 2050s Sea Level Rise

0 1,000 FEET

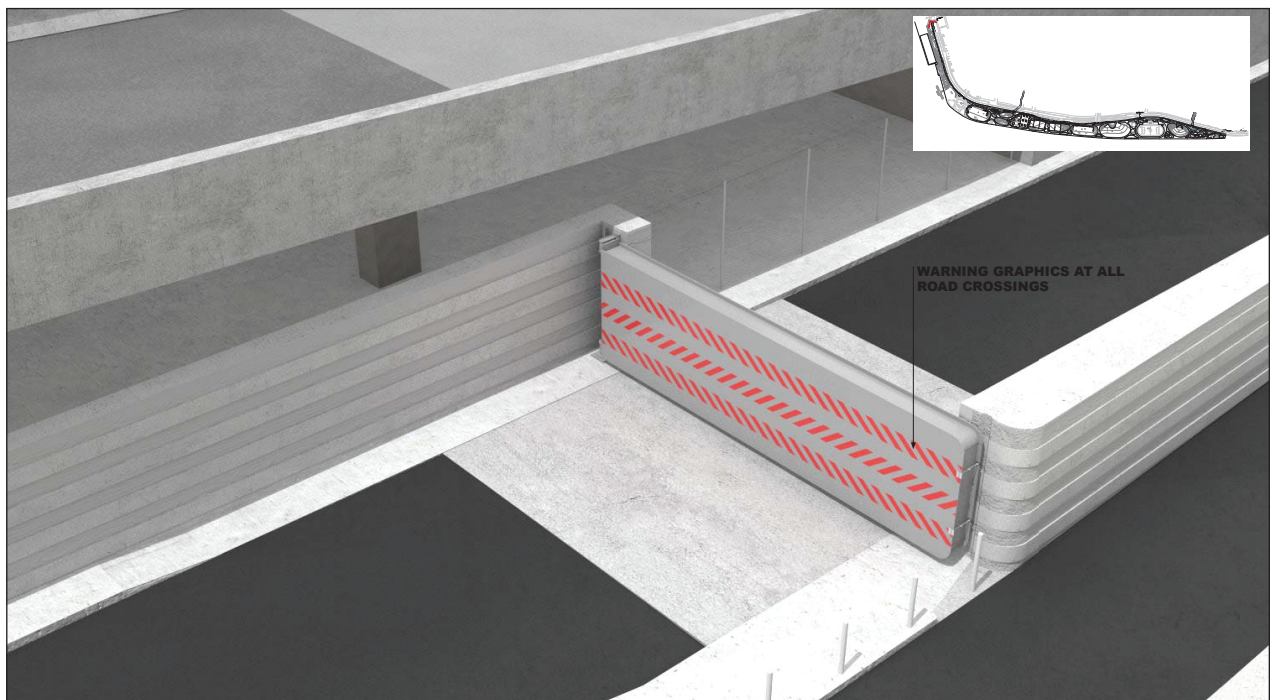




NOTE: Preliminary Illustrative Design Concept

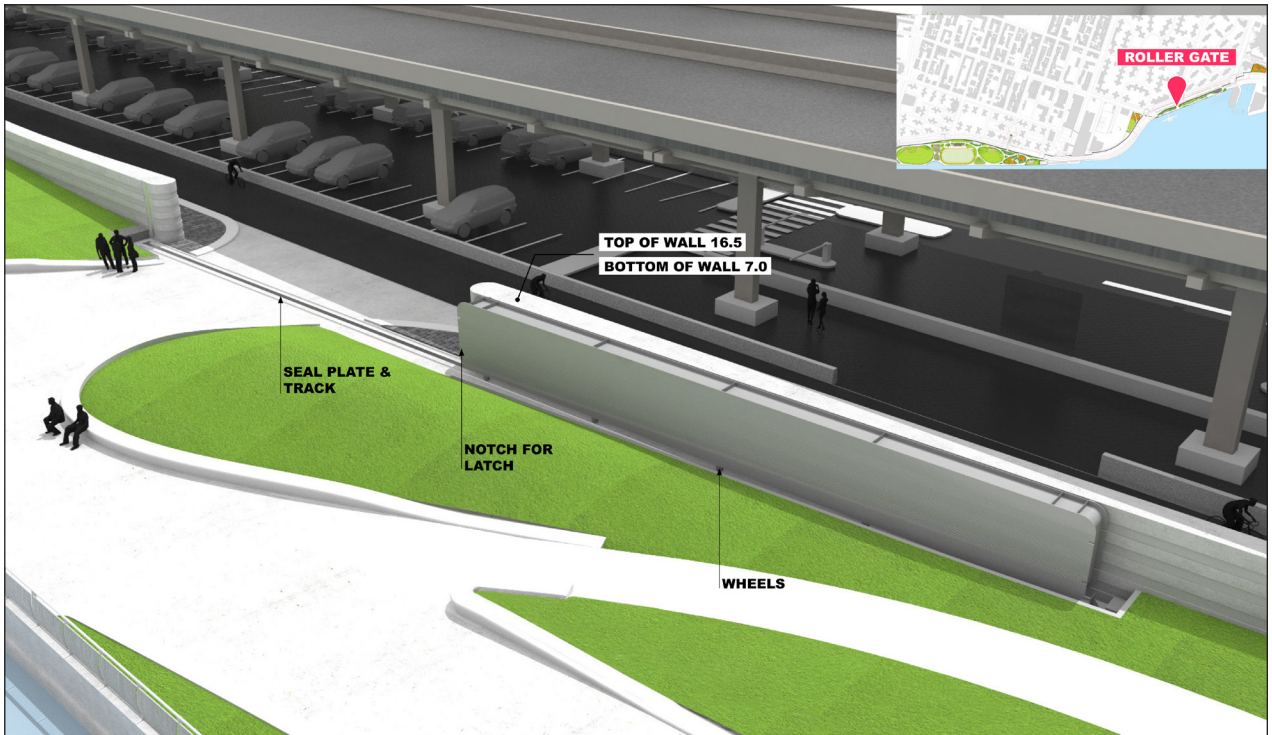


Open position

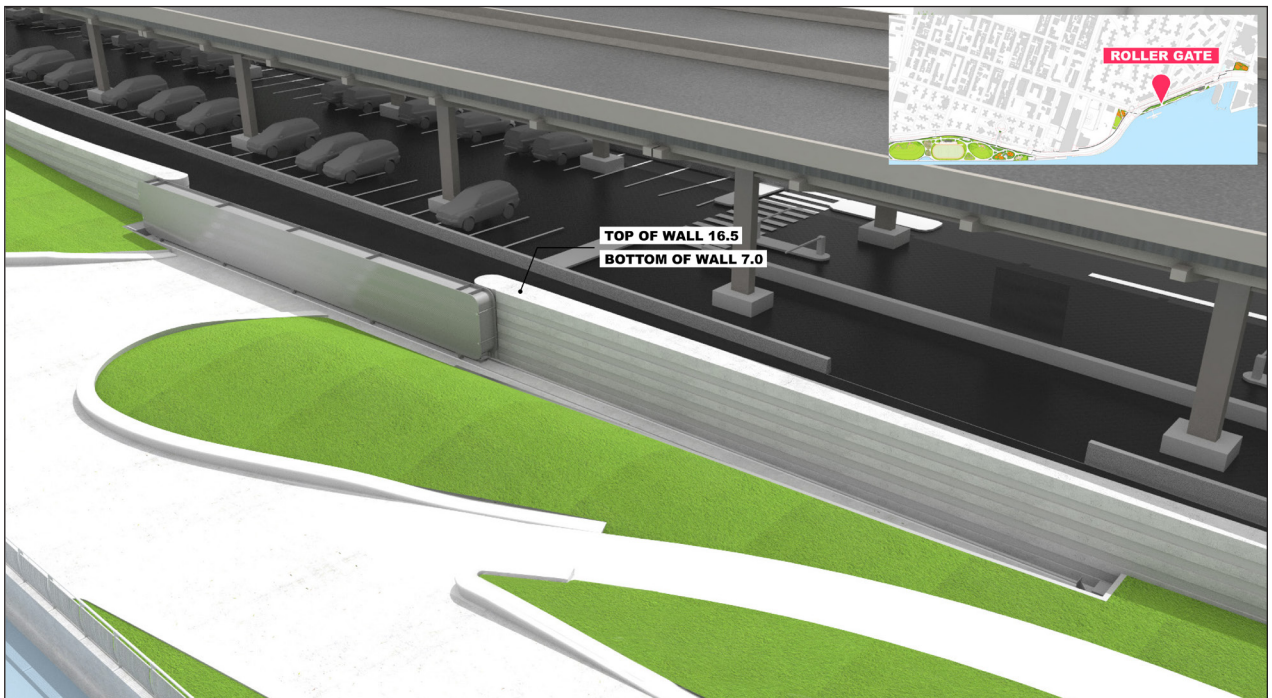


Closed position

NOTE: Preliminary Illustrative Design Concept

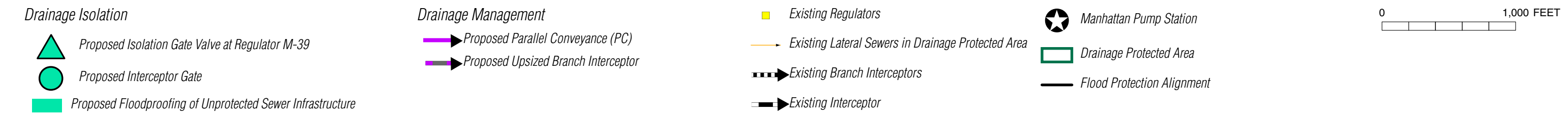
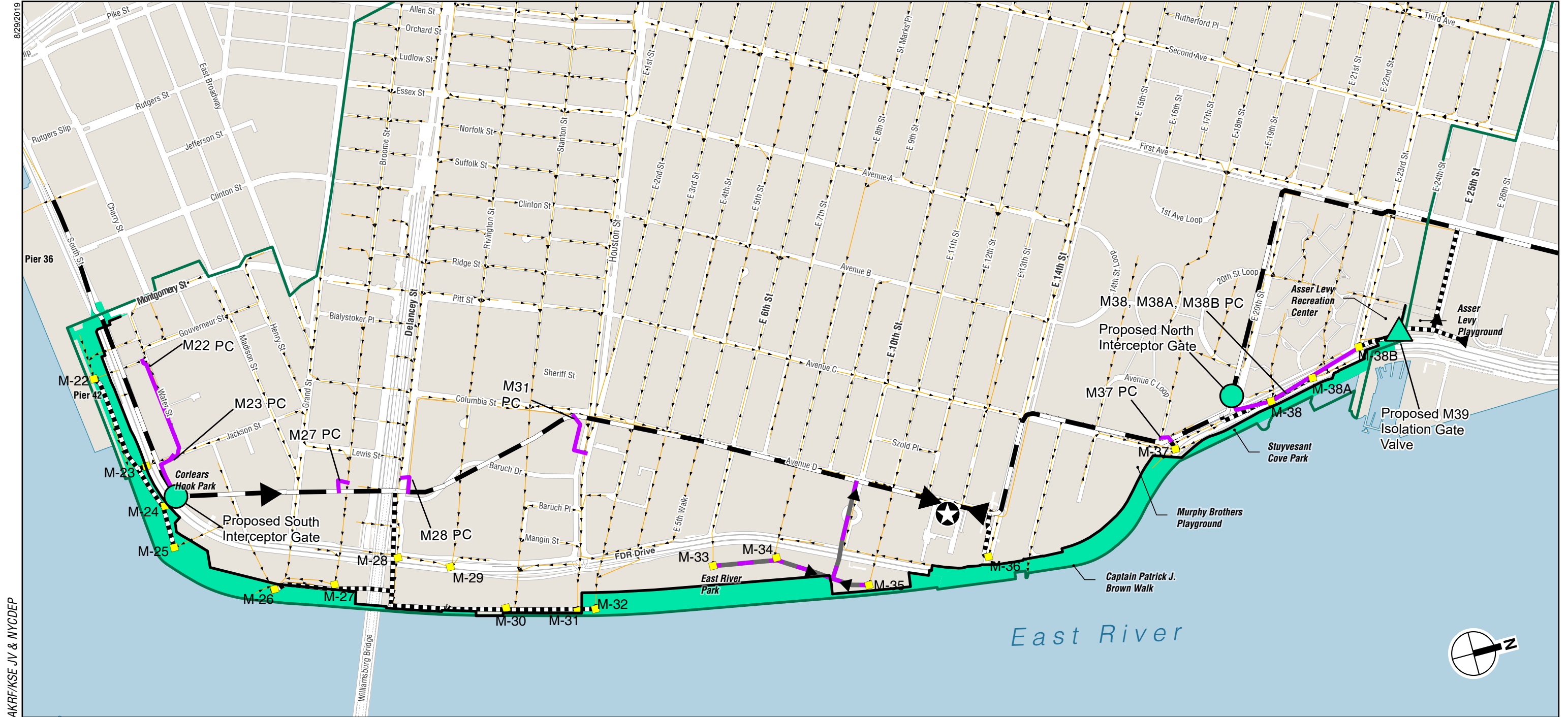


Open position



Closed position

NOTE: Preliminary Illustrative Design Concept





Project Elements

- Proposed Floodwall
- Redesigned Open Spaces

NOTE: Based on Preliminary Draft Design Concept. See Appendix C3 for additional design details on this alternative. Design includes flyover bridge.

Appendix A: Projected Expenditures and Outcomes

As required by the March 5, 2013, Federal Register Notice [Vol. 78, No. 43], the City includes projected expenditures and outcomes in its CDBG-DR Action Plan. The current expenditures for the East Side Coastal Resiliency project have been updated to reflect the current project timeline. In order to speed the pace of recovery spending, the City has elected to spend City funding in advance of Federal CDBG-DR reimbursement. Program expenditures in the projections that follow are defined as reimbursements to the City from the Federal treasury for expenses that the City has already incurred.

Projections of CDBG-DR Expenditures and Actual CDBG-DR Expenditures to Date for Coastal Resiliency Programs

Updated August 2019

	Calendar Year 2013			Calendar Year 2014				Calendar Year 2015				Calendar Year 2016				Calendar Year 2017			
Coastal Resiliency Programs	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4
Projected Disbursements by Quarter	-	-	-	-	-	-	-	-	-	-	4.64	0.27	2.80	1.08	3.83	15.30	4.24	2.00	2.00
Projected Cumulative Disbursements	-	-	-	-	-	-	-	-	-	-	4.64	4.91	7.71	8.79	12.62	27.92	32.16	34.16	36.16
Actual Quarterly Disbursements (from QPRs)	-	-	-	-	-	-	-	-	-	-	8.72	1.26	1.81	1.08	7.61	7.45	4.24	1.22	2.14
Actual Cumulative Disbursements	-	-	-	-	-	-	-	-	-	-	8.72	9.98	11.79	12.87	20.48	27.92	32.16	33.38	35.52

	Calendar Year 2018				Calendar Year 2019				Calendar Year 2020				Calendar Year 2021				Calendar Year 2022		
Coastal Resiliency Programs	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
Projected Disbursements by Quarter	1.00	1.50	3.50	6.00	6.00	6.00	10.00	6.00	6.00	20.00	25.00	31.00	40.00	35.00	30.00	23.50	20.00	20.00	11.34
Projected Cumulative Disbursements	37.16	38.66	42.16	48.16	54.16	60.16	70.16	76.16	82.16	102.16	127.16	158.16	198.16	233.16	263.16	286.66	306.66	326.66	338.00
Actual Quarterly Disbursements (from QPRs)	0.78	2.23	3.16	3.15	5.29	-													
Actual Cumulative Disbursements	36.30	38.52	41.69	44.84	50.13	50.13													

(All \$ amounts in Millions)

Note: this chart reflects expenditures as defined by HUD. Projections show the estimated date of City reimbursement of CDBG-DR funds, not the date of service delivery. Thus, service deliveries may occur much earlier than the dates associated with the projected expenditures in these charts.

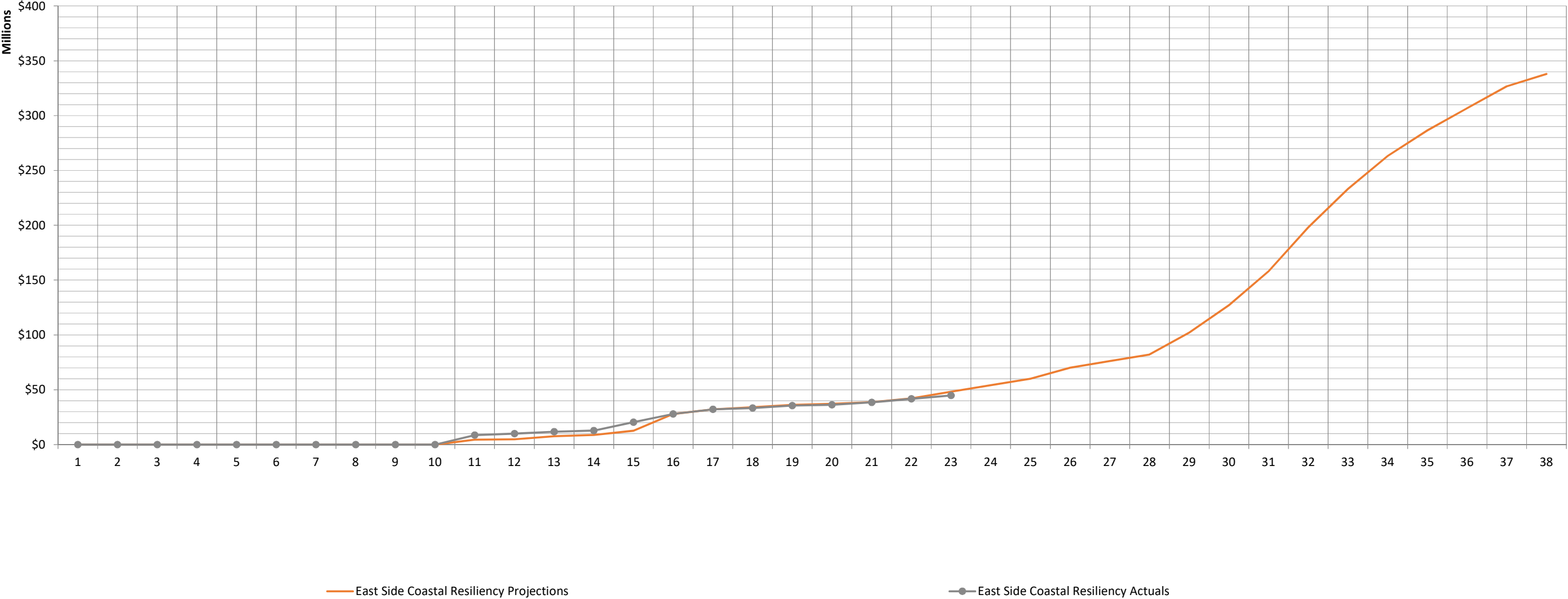
Projections of CDBG-DR Outcomes and Actual CDBG-DR Outcomes to Date for Coastal Resiliency Programs

Updated August 2019

	Calendar Year 2018				Calendar Year 2019				Calendar Year 2020				Calendar Year 2021				Calendar Year 2022		
Coastal Resiliency Programs	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3	Q4	Q1	Q2	Q3
East Side Coastal Resiliency																			
Projected # Linear Feet Improved (Cumulative)	-	-	-	-	-	-	-	50	150	350	750	1,550	3,150	6,350	9,550	11,550	11,563	11,563	11,563
Projected # Linear Feet Improved (by Quarter)	-	-	-	-	-	-	-	50	100	200	400	800	1,600	3,200	3,200	2,000	13	-	-
Actual # Linear Feet Improved (Cumulative)	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Actual # Linear Feet Improved (from QPRs)	-																		

City of New York Disaster Recovery Program

Coastal Resiliency Expenditure Projection and Actuals



Appendix B: Benefit Cost Analysis